

GREEN AUDIT REPORT 2020-21
OF
AMRUTVAHINI COLLEGE OF ENGINEERING
*Near Pune Nashik Highway, Ahmadnagar,
Sangamner, Maharashtra 422608*

PREPARED BY

DR. B. E. KUSHARE AND ASSOCIATES
PROF. DR. B. E. KUSHARE

*POWER QUALITY & ELECTRICAL CONSULTANT,
CERTIFIED ENERGY AUDITOR,
CHARTERED ELECTRICAL ENGINEER (IEE UK)
FLAT NO.G1 AND G2,
SHREE B.D.WAGH CO.OPP.HOUSING SOCIETY,
SWAMI NARAYAN NAGAR,
OPP.APPOLO HOSPITAL,
PANCHAVATI, NASHIK 422003*

January-2021



A Mission made programme can be created for energy conservation. We have to set yearly target of saving twenty five billion units per year from the present 3.2 billion units, so that we can wipe out the existing shortage within the next four years"

Dr APJ Abdul Kalam

Ex. Hon. President of India

Address at National Energy Awards Function,

Dec.15, 2005

ACKNOWLEDGEMENT

Power quality, Harmonic audit, Resonance Test Electrical Consultancy cell of DR. B.E. Kushare and Associates, Nashik, places sincere gratitude to all management , CEO , Principal and HODs for providing necessary support and data during campus green Audit

Our sincere thanks to Maintenance In charge, all Electrician of Maintenance cell, for excellent co-ordination during field measurements and providing accurate data required the said work and preparation of green Audit report.

(DR.) B. E. KUSHARE
Certified Energy Auditor
Power Quality Consultant

Table of content :

Executive Summary

1.00: Introduction

1.1:Objectives

1.2: Methodology

1.3:Activities carried out during green Audit

1.4:Focus Areas of green Audit and green audit scope , input parameters considered

1.5:Water resources , management , conservation , recycle and reuse Initiatives

1.6:Recommendations

1.7:Solid waste generation and recycling its reuse :

1.8:E wastage Management :

1.9:Soil conservation initiatives :

1.10:Initiatives to reduce site Disturbances :

1.11:Utilisation of day light and Natural Ventilation :

1.12:Energy Efficiency improvement initiatives :

1.13:Harnessing Of renewable Energy :

1.14:Energy substitution Initiatives :

1.15:Transportation :

1.16:Paper , News print and cardboard :

1.17:Noise Pollution :

1.18:Heat island effect :

1.20:Indoor Air Quality:

2.00:Summary of observations and recommendation :

EXECUTIVE SUMMARY :

Green audit of institute campus was carried out . Various observations and recommendations are summarised as below :

Summary of observations :

Institution has initiated and adapted all major green initiatives summarized below :

- Rain water harvesting , water management , conservation , recycle and reuse
- Soil conservation ‘
- Plantation of adequate number of trees , landscape and lawn area .
- Maximum utilisation of day light and natural ventilation in indoor places
- Waste collection , recycle and reuse .
- Energy conservation initiatives
- E waste management .
- Energy substitution by use of solar water heaters in place of Electrical heaters
- Fuel substitution by use of biogas to substitute LPG
- Ground water campus distribution by gravity
- Installation of 400KWp grid interactive SPV system and 5KW wind generator which is meeting more than 50% of Electricity consumption of institute facilities .
- Reuse of students submission single side papers for administrative use
- RO system for providing portable drinking water

Proactive Energy efficiency and green initiatives resulted into recipient of following state level awards

Awards received for Energy Conservation Initiatives :

12th state level MEDA Award in Educational Institute Category

Energy efficient unit award of CII during this year

Recommendations :

Reduce water use by low volume , low pressure taps , auto flush system for urinals , Low volume flush tanks .

Installation of water level controllers on overhead tanks to auto switch of UG tank pumps

Installation of heat pump in ladies Hostel as a back up water heating in place of Electric Geyser.

Providing sun film to window glasses to reduce heat gain .

Recommended Energy conservation measures as per Energy Audit Report to improve Energy efficiency and reduce energy intensity .

1.00:Introduction :

Global warming which is resulting into increase in earth temperature is one of the concern to mankind .Various international bodies are working to reduce impact of human activities on Environment .Energy , environment and ecology are interlinked and important aspects. For sustainable developments it is necessary to provide greater emphasis on Energy efficiency , reduce , recycle and reuse in addition to harness renewable energy to meet Energy demand .Carbon foot print reduction of every organisation is important to reduce environmental changes , fast depletion of resources .Active participation of every individual and organisation is necessary towards sustainability .Green Audit is one of the important tool to reduce energy intensity as energy needs of institutions are increasing day by day .

Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental diversity of various establishments. It aims to analyse environmental practices within and outside of the concerned sites, which will have an impact on the eco-friendly ambience. Green audit can be a useful tool for a Institutions to determine how and where they are using the most energy or water or resources, identification of wastages, high energy loss areas , opportunities for reuse /recycle , use of natural resources , fuel and energy substitutions .After detailed green audit areas of improvement are identified implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of Green impact on campus. If self enquiry is a natural and necessary outgrowth of a quality education, it could also be stated that institutional self enquiry is a natural and necessary outgrowth of a quality educational institution. Thus it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent.

1.1:OBJECTIVES:

The Green Audit of an institution is becoming a paramount important these days for self-assessment of the institution, which reflects the role of the institution in mitigating the present environmental problems. Basic Aim of green audit is to study energy consumption pattern , % Energy from fossil fuel , waste generation , water and air quality , extent to which energy and fuel substitution is done , initiatives towards water and energy , soil conservation and harnessing of renewable energy to reduce overall foot print of institution .Implementation of mentioned initiatives in institution will have greater impact on students in terms of sustainable development . Therefore, the purpose of the present green audit is to identify, quantify, describe and prioritize framework of Environment , Energy and water Sustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out Green Audit are:

1. To identify areas where there are Energy wastages and high energy losses
2. To identify opportunities for Energy and Fuel substitution
3. To identify opportunities to reduce , reuse /recycle wastage generation
4. To identify opportunities for rain water harvesting
5. To document the quality of recycled waste water for gardening and other purpose
6. To document the solid Waste disposal system within campus
7. To document the ambient environmental condition of air, water and noise in the campus.
8. Providing a database for corrective actions and future plans.
9. To assess whether extracurricular activities of the Institution support the collection, recovery, reuse and recycling of solid wastes.
10. To identify the gap areas and suggest recommendations to improve the Green Campus status of the institution

1.2:METHODOLOGY:

The purpose of the green audit of is to ensure that the practices followed in the campus are in accordance with the Green Policy adopted at the institution. The methodology include the preparation physical inspection of the campus, observation and review of the documentation green audit parameters at intervals , interviewing key persons and data analysis, measurements and recommendations. .

Site Visit :

Name of Institution : Amrutvahini College of Enginnering , Sangamner

Address : Amrut Nagar , Near Pune Nashik High Way , Sangamner , Dist : Ahmednagar

Number of students :3453

Number of staff : A)Teaching :193 B)Non teaching :178

Areas of campus :15.06 acres

Total Construction area :Carpet area :42858.2 square meter

Date of Visit : 04.01.2021 , 05.01.2021

Building Visited :

- Engineering college main building
- Mechanical and Production Block
- Hostels
- Play ground and other recreational Areas

Green Audit Team Members :

A)DRBEKA Team Members

- DR B E KUSHARE : Certified Energy Auditor
- Mr Mangesh Vikhrankar
- Mr Bhoskar Vithal

B) Institute Team Members :

HOD Electrical , HOD Mechanical , HOD Civil , HOD computer and representative staff members

1.3:Activities carried out during green Audit :

- Meeting with Principal and HODs
- Meeting with staff representatives of various green initiative committees , Electrical , water , gardening and related departments
- Review of documents and related data collection
- Joint site visit for data collection and review of various green initiatives implemented by institutions and areas for further improvements

1.4:Focus Areas of green Audit and green audit scope , input parameters considered :

- Water resources , its management and conservation , waste generation , recycle and reuse .Rain water harvesting
- Soil conservation .
- Energy conservation .
- Renewable Energy use
- Fuel and Energy substitution
- Use of sun light for illumination of indoor spaces
- Extent to which natural ventilation is provided
- Quality of water , air and noise levels
- Awareness among various stakes holders within campus
- Landscape and Green Cover

1.5:Water resources , management , conservation , recycle and reuse Initiatives :**Water Supply scheme :**

Water is lifted from kasar wadi pumping house and stored in storage reservoir near Amrut kuti

Total storage capacity of reservoir : 8528KL

PVC Sheet is laid on storage reservoir ground to reduce percolation losses



Fig 1.00: 8528 KL Water reservoir

Water distribution within Engineering campus :

Water distribution at various UG tank from reservoir is through gravity

Daily Water supply to Engineering college premises :130KL

Daily water supply to Engineering Colleges Boys and Girls Hostels : 330KL

Number of wells : 2 Numbers

Drinking Water treatment System :

R O systems are installed at following locations

1)Main building : 250 LPH

2)Civil Building :250LPH

Hostels : 4X250 LPH

Quality of drinking water checked periodically .Water in all taps is portable water .

Water Management Systems :

Adapted Methods :

- Water Efficient Landscaping
- Drip irrigation and sprinkler system implemented for garden and lawn areas .No flooding of water is done to water plants , lawns .
- Rain water harvesting
- Water use reduction by provision of float valves , water metering and accounting system



Drip Irrigation System for Plant and garden



Sprinkler System for lawn

Rain Water Harvesting initiatives :

Rain water is harvested from terrace , floors and use for watering of gardens .Surface run off from various surfaces are collected , filtered and reused for gardening and other purpose .Overflow from tank is collected and transferred to rain water collection point

Adapted rain water harvesting measures :

- Rain water collection and storage
- Ground water recharging

Rain water harvesting is implemented in Sajangad , Sinhagad Hostel .Total 25 Units are installed .Harvested Rain water is collected in UG tank and used for ground water recharging

Total number of staff and students = 3824

Annual water consumption = $45 \times 3824 \times 317 = 54549360$ Litres per annum

Total rain fall catchment area of building :

Terrace = 9938.71 Square meter

Annual average rainfall = 0.41m

Water harvesting potential = Rainfall (mm) x Collection Efficiency

Total rain water collection = $0.41 \times 9938.71 = 4074.87$ Meter cube = 4074870 Litres /year

Capacities of water tanks :

Total tank capacities = 339567.00 Litres

Most of water used in campus is from water collected from rain and river .Water in all taps in campus are portable



Rain Water Harvesting System

Water accounting system :

Water supplied from main reservoir is measured and accounted section wise

Strom Water Design :

Paving systems are provided to reduce storm water runoff by allowing precipitation to infiltrate to underground through voids in paving

Sewage Treatment plant :

Environmental policy is displayed at sewage treatment plant .Campus sewage is collected and treated in 0.4MLD sewage treatment plant .Treated sewage water and sludge is used for watering of farm and as fertilizer. Total campus generated sewage is treated and reused .



0.4 MLD Sewage treatment Plant

1.6: Recommendations

Install low-flow faucets.

- Install low-volume toilets flush which saves 6 to 7 galleon per flush
- Install sensors in urinal for auto flushing .
- Recommended initiatives will help to reduce water demand , amount of Energy required for pumping water from source as well as STP energy consumption .
- Install water level controllers at Hostel overhead tanks to auto switch OFF water pumps to avoid water wastage.

1.7: Solid waste generation and recycling its reuse :

In institute campus both bio degradable and non degradable waste are segregated

Building population = 3824

Solid waste generation = $0.042 \text{ Cubic meters} \times 3824 = 160608 \text{ Cubic meter}$.0.4 MLD sewage treatment plant is used to treat campus sewage and is reused for farming , gardening .Composting is also available at site .All organic waste is converted into compost .The total plot area is 52609.31 square meter .60% of total plot area is landscaped .Organic waste generated is collected , composted and manure created by this waste is used in landscape areas.

In campus other waste generation comprises of kitchen waste in hostel canteens .Kitchen generated waste is used in biogas and biogas is used as a fuel for cooking food .Bio fertilizer is used for gardening



Bio gas Plant at Ladies Hostel Campus



Vermi Compost :

Campus plant leaves are collected and vermi compost is used for farm /gardening

1.8:E wastage Management :

E waste generation take place due to Electronic and computers equipments are beyond repair . Computers are repaired and lower version computers are donated to schools

Display modules of various Electronic systems are prepared for enhancing teaching learning process .There is E waste management policy at departments to reduce E waste generation and utilisation .

1.9:Soil conservation initiatives :

Adequate measures are taken for effective sedimentation and soil erosion control by vegetation , planting trees , lawns .Planted trees helps to provide shading in summer and allows heat gain during winter .Adequate plantation , vegetation in campus helps to control erosion , sedimentation , dust and pollution control .Drip and sprinkler irrigation systems are used for watering plants ,,garden and lawns which also helps in water management and soil conservation .



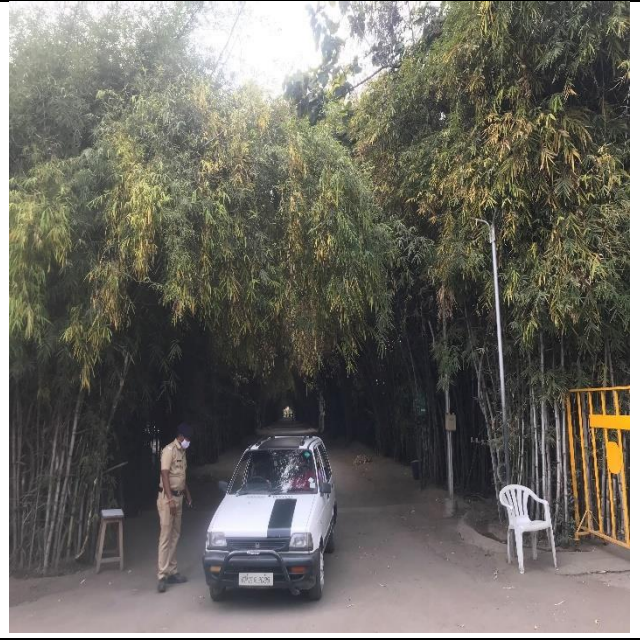
Various adapted Methods are :

- 1) Plantation of lawns which helps in holding top soil and penetration of rain water into ground which helps to improve water table and helps to reduce soil erosion
- 2) Pavement : Hardscaping is provided reduces erosion of soil and soil conservation
- 3) Plantation of Variety of plants which helps for water and soil conservation

Total Number of trees Planted in Engineering Campus :

7030 Tress are planted in Engineering college campus and total number of tress planted in hostel and other areas are 12713 .





Recommendations :

Recommended to plant medicinal trees

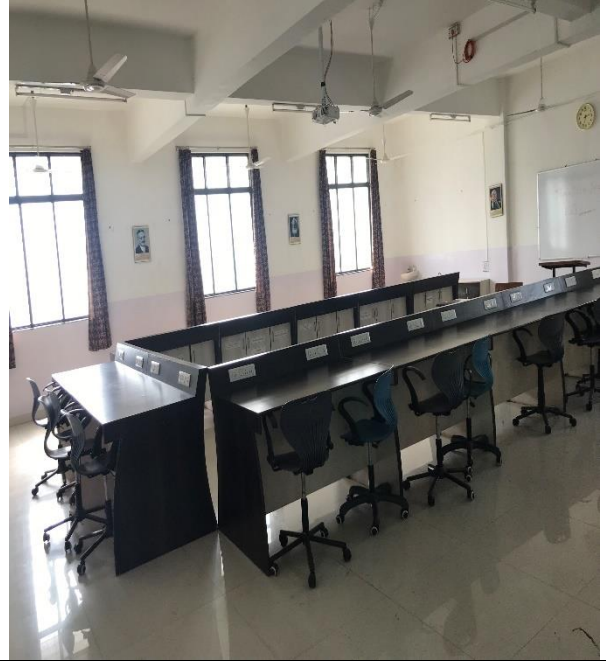
1.10: Initiatives to reduce site Disturbances :

Adapted Measures :

- Open spaces are equal to building foot print
- Compact parking provided away from Building
- Soil conservation by preservation of top soil
- Conservation of site vegetation
- Maximum use of day light for indoor illumination
- Water recycle , reuse
- Landscape drip and sprinkler irrigation system
- Natural ventilation
- Installation of Wind mills and 400KWp roof top grid interactive solar PV system to harness maximum renewable Energy and reduce use of energy from fossil fuels to reduce environmental degradation .
- Bio gas plant and use if same for cooking

1.11: Utilisation of day light and Natural Ventilation :

Building is designed to utilize maximum day light for indoor illumination in teaching learning and other areas. Natural Ventilation is provided .Mentioned initiatives helps to reduce impact of use of Electricity from fossil fuels and its impact on environment during day period as maximum teaching learning process are scheduled during day .



Indoor Illumination by day lighting :

Location	Illumination Level	Average Illumination
Cap production lab	160, 171, 153, 127, 143, 149, 152	150.71
Electrical HOD Office (S27)	173, 215, 163, 123, 101, 65, 64, 98	125.25
Electrical Seminar Hall	134, 133, 121, 129, 117, 116, 128, 122, 133, 138, 125, 115	125.92
EMS Lab Electrical department	118, 153, 143, 228	160.50
Electrical machine (Lab 1& 2)	149, 156, 143, 131, 180, 124, 141, 145, 190, 106, 59, 74, 107	131.15
Software lab	177, 1766, 171, 163, 161, 176, 172	398.00
Basic electrical lab	129, 130, 167, 165, 198, 194, 102, 140, 157	153.56
FE Coordinator	170, 175, 250, 299, 327, 510	288.50
HOD (Eng. Science)	229, 238, 213, 216, 261, 237, 186, 211	223.88
T7	166, 155, 191, 212, 159, 206, 187, 149, 155, 288, 450, 457	231.25
T8		
T9		
T10(Drawing Hall/ Seminar)		
Digital HP Lab	279, 282, 290, 239, 247, 279, 276, 301	274.13
Project lab	223, 231, 245, 221, 229, 231, 358, 362, 252	261.33
Digital Communication lab	278, 274, 281, 273, 261	273.40
Faculty room (S49)	228, 231, 158, 152, 189, 169, 287, 292, 141, 153	200.00
Digital Electronics (S-40)	115, 146, 128, 149, 127, 99, 75, 84, 108	114.56
Electronics Network (S-39)	132, 153, 177, 108, 172, 160, 142	149.14

Location	Illumination Level	Average Illumination
HOD (Electronics)	227, 231, 209, 205, 177, 158, 208	202.14
S-21 Seminar hall (ETC Dept.)	318, 280, 360, 352, 344, 323, 280, 274	316.38
S-58 PC Lab (ETC Dept)	177, 159, 112, 92, 142, 124, 90	128.00
S1A-Audio & video lab	85, 151, 130, 153, 146, 131, 143, 137	134.50
G-39 Digital Library	224, 222, 205, 61, 58, 102, 109, 85	133.25
G-39B Periodical section	89, 169, 167, 153, 159	147.4
G-42 Library area top (reading room)	145, 261, 263, 176, 253, 274, 205, 192, 155, 287, 210, 179, 240, 166, 252	217.20
Periodical section	204, 150, 159, 145	164.50
T-10 Drawing hall	150, 139, 120, 158, 183, 163, 215, 190	164.75
Software Lab (F17)	261, 264, 285, 223, 228, 225	247.67
PG Lab -2 (F16)	209, 204, 170, 146, 102, 107	156.33
Seminar Hall IT (F54)	54, 48, 144, 256, 528, 328, 428, 440, 480, 271, 315, 415	308.92
Meeting Hall	130, 113, 123, 118, 137, 134, 151, 156	132.75
Faculty room(F49)	243, 240, 237, 162, 176, 173, 181, 189	200.125
HOD Office (F48)		316

Location	Illumination Level	Average Illumination
	286, 245, 476, 122, 164, 420, 426, 389	
Computer Graphics (F47)	138, 147, 136, 158, 173, 153, 151, 249	163.125
Internet Lab (F46)	104, 134, 116, 209, 207	154
Software Lab (F44)	90, 92, 123, 127, 203, 186, 173, 181	146.875

Recommendations :

Recommended to apply sun film to window glasses to reduce heat gain and keep curtain open for maximum utilisation of natural resources to meet illumination and ventilation requirement to

1.12:Energy Efficiency improvement initiatives :

- Use of LED light fixtures in all new installations
- Replacement of conventional light by LED where hours of use is higher
- Use of 3 star Air conditioners .
- Campus ground water distribution by gravity

1.13:Harnessing Of renewable Energy :

5KW wind generator and 400KWp roof top solar PV system is installed to harness renewable energy with net metering facility .Total annual generation from installed SPV system will be around 480000.00 Units .% Energy harnessed through roof top solar PV system is more than 50% of Electricity consumption of campus .Annual average Energy consumption of campus before COVID 19 was 813720 KWH units .Maximum harnessing of renewable energy and its local use helps to reduce fossil fuel consumption as overall cascaded efficiency of power system is 25% .Generation of 480000 KWH units through roof top solar PV system is equivalent to generation of 1920000KWH units in central generation plant .Installation of solar roof top PV system helped to reduce carbon foot print by more than 50% .

Recommendations :

Carry out cleaning of Solar PV panels on regular basis to maintain Efficiency of SPV system



400KWp Roof top SPV System



5KW Wind Generator

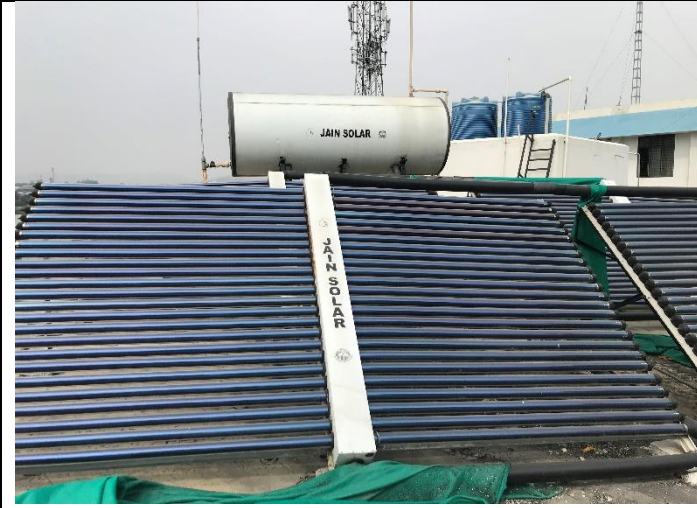
1.14:Energy substitution Initiatives :

Out of various principles of Energy management Energy and Fuel substitution are important principles .Solar water heating systems are installed at Boys and girls Hostel to meet Hot water requirement a step towards Energy substitution .

Recommendations:

Recommended to carry out cleaning of heat transfer surfaces regularly to maintain Efficiency of solar hot water generation system

Provide Heat pump as a back up during rainy season and part of winter in girl's hostel inplace of instant geysers provided as a back up .



Solar Water Heating Systems at Hostel Roof

Energy Bill Analysis:

Sanctioned contract demand – 415KVA, 55% OF sanctioned contract demand: 228.25KVA

Month	Recorded MD in KVA	Recorded Avg. P.F.	Billed MD in KVA	Calculated actual Demand in KVA considering P.F. As One	Difference in billed MD and actual MD at unity Power factor	KVA @Rs XXXX From Bill Data	Reduction in MD charges in Rs	Monthly KWH consumption	Monthly KVAH consumption
Nov-19	179	0.994	208	177.93	30.07	391	11758.93	69058	69350
Dec-19	220	0.990	221	217.80	3.20	391	1251.20	71575	71755
Jan-20	219	0.986	219	215.93	3.07	391	1198.81	66925	67240
Feb-20	207	0.980	208	202.86	5.14	391	2009.74	63682	63750
Apr-20	94	0.999	228	93.91	134.09	411	55112.63	7607	7615
May-20	96	0.978	228	93.89	134.11	411	55120.03	8087	10878
Jun-20	105	0.916	228	96.18	131.82	411	54178.02	6837	7464
Jul-20	89	0.921	228	81.97	146.03	411	60018.74	6946	7542
Aug-20	88	0.908	228	79.90	148.10	411	60867.46	7004	7714
Sep-20	101	0.922	228	93.12	134.88	411	55434.86	7845	8509
Oct-20	95	0.939	228	89.21	138.80	411	57044.75	8422	8969
Nov-20	92	0.893	228	82.16	145.84	411	59941.88	7600	8511
Total								3,31,588	3,39,297

1.15:Transportation :

Institute campus is well connected by public transportation system as it is near Nashik pune Highway .Maximum students stay in Hostel and faculties in staff quarters which helps in minimisation of use of buses and its impact on Environmental pollution .Pedestrian access is all services are provided .

1.16:Paper , News print and cardboard :

Around 700 rims per year are required for stationary .All the waste papers of students files is reused for administrative purpose .Waste papers are send for recycling though local vendors in town .One side stationary use policy is adapted by institution which resulted into substantial reduction in stationary procurement for administrative purpose .

1.17:Noise Pollution :

Educational Campus is located reasonable away from Pune Nashik High way , Car parking , Two wheeler Parking and Sugar Industry. Sample basis noise level measurement were carried out was observed less than 90 Db .

1.18:Heat island effect :**Methods adapted to reduce heat island effect in institute campus :**

- Provision of shady trees
- Ground cover in the farm of plantation , lawns , landscape
- Use of light colour materials on external surfaces to reflect heat and light
- Pervious surfaces for percolation of water into soil

1.20:Indoor Air Quality:

Indoor Air quality is good .

2.00:Summary of observations :

- Institution has initiated and adapted all major green initiatives summarised below :
- Rain water harvesting , water management , conservation , recycle and reuse
- Soil conservation ‘
- Plantation of adequate number of trees , landscape and lawn area .
- Maximum utilisation of day light and natural ventilation in indoor places
- Waste collection , recycle and reuse .
- Energy conservation initiatives
- E waste management .
- Energy substitution by use of solar water heaters in place of Electrical heaters
- Fuel substitution by use of biogas to substitute LPG
- Ground water campus distribution by gravity
- Installation of 400KWp grid interactive SPV system and 5KW wind generator which is meeting more than 50% of Electricity consumption of institute facilities .
- Reuse of students submission single side papers for administrative use
- RO system for providing portable drinking water

Proactive Energy efficiency and green initiatives resulted into recipient of following state level awards

Awards received for Energy Conservation Initiatives :

12th state level MEDA Award in Educational Institute Category

Energy efficient unit award of CII during this year

Recommendations :

Reduce water use by low volume , low pressure taps , auto flush system for urinals , Low volume flush tanks .

Installation of water level controllers on overhead tanks to auto switch of UG tank pumps

Installation of heat pump in ladies Hostel as a back up water heating in place of Electric Geyser.

Providing sun film to window glasses to reduce heat gain .

Recommended Energy conservation measures as per Energy Audit Report to improve Energy efficiency and reduce energy intensity .

THERMOGRAPHY REPORT OF AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER PREPARED BY DR. B. E. KUSHARE AND ASSOCIATES, NASHIK



Company	DR.B.E.KUSHARE AND ASSOCIATES	Tester:
	FLAT NO: G1 AND G2, SHREE B. D. WAGH CO. OPERATIVE HOUSING SOCIETY, SWAMINARAYAN NAGAR NASHIK	MANGESH VIKHARANKAR
		Phone: 9420906281
		E-Mail: kusharebe1234@gmail.com

Device	testo 871	Serial No.: 61707041
		Lens: 35° x 26°

Customer	AMRUTVAHINI COLLEGE OF ENGINEERING
	Near Pune Nashik Highway
	Ahmadnagar, Sangamner,
	Maharashtra-422608

THERMOGRAPHY REPORT OF AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER PREPARED BY DR. B. E. KUSHARE AND ASSOCIATES, NASHIK

LOCATION: MAIN LT PANEL FEEDER-STAFF QUARTER SWITHGEAR

File:

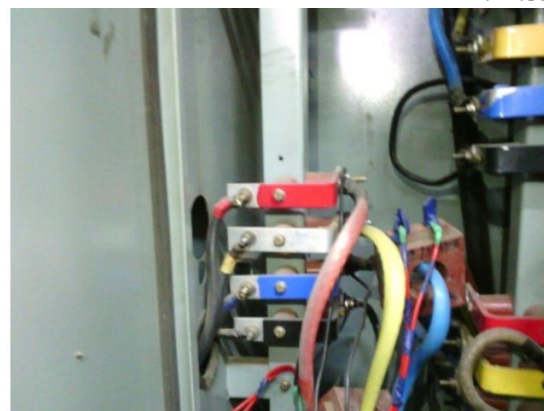
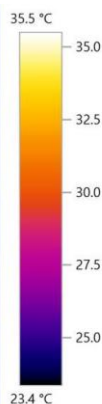
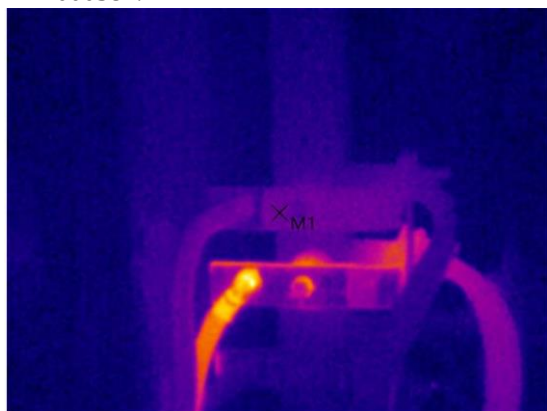
IR000587.BMT

Date:

04-01-2021

Time:

12:47:33



Picture parameters:

Emissivity: 0.95

Refl. temp. [°C]: 20.0

Picture markings:

Measurement Objects	Temp. [°C]	Emiss.	Refl. temp. [°C]	Remarks
Measure point 1	25.6	0.95	20.0	CenterSpot

Remarks:

OK

THERMOGRAPHY REPORT OF AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER PREPARED BY DR. B. E. KUSHARE AND ASSOCIATES, NASHIK

LOCATION: MAIN LT PANEL FEEDER-CIVIL BUILDING

File:

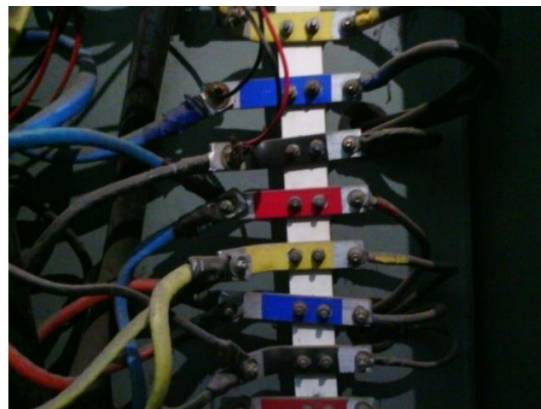
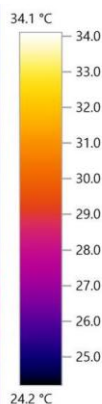
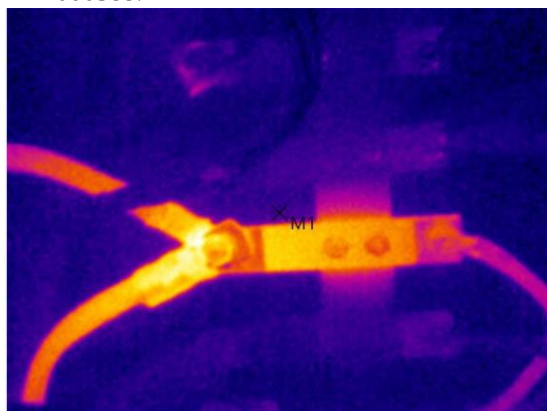
IR000588.BMT

Date:

04-01-2021

Time:

12:55:47



Picture parameters:

Emissivity: 0.95
Refl. temp. [°C]: 20.0

Picture markings:

Measurement Objects	Temp. [°C]	Emiss.	Refl. temp. [°C]	Remarks
Measure point 1	25.6	0.95	20.0	CenterSpot

Remarks:

OK

THERMOGRAPHY REPORT OF AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER PREPARED BY DR. B. E. KUSHARE AND ASSOCIATES, NASHIK

LOCATION: CIVIL+ELECTRICAL+SCIENCE PANEL INCOMER

File:

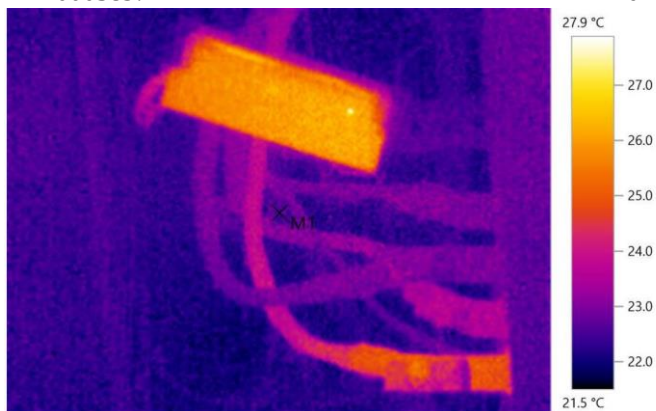
IR000589.BMT

Date:

04-01-2021

Time:

13:12:18



Picture parameters:

Emissivity: 0.95
Refl. temp. [°C]: 20.0

Picture markings:

Measurement Objects	Temp. [°C]	Emiss.	Refl. temp. [°C]	Remarks
Measure point 1	22.5	0.95	20.0	CenterSpot

Remarks:

OK

THERMOGRAPHY REPORT OF AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER PREPARED BY DR. B. E. KUSHARE AND ASSOCIATES, NASHIK

LOCATION: COMPUTER+LIBRARY ELECTRONICS BUSBAR CHAMBER

File:

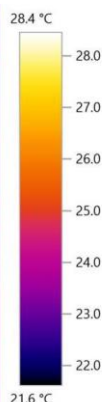
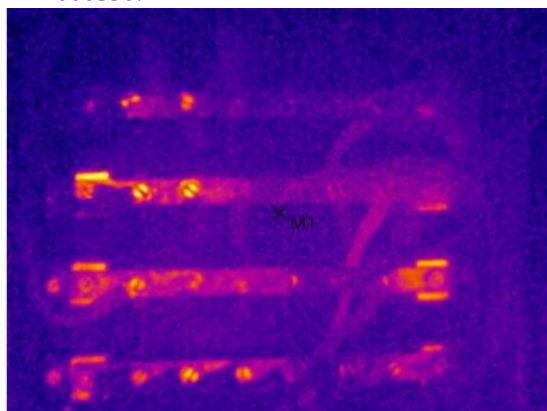
IR000590.BMT

Date:

04-01-2021

Time:

13:19:20



Picture parameters:

Emissivity: 0.95
Refl. temp. [°C]: 20.0

Picture markings:

Measurement Objects	Temp. [°C]	Emiss.	Refl. temp. [°C]	Remarks
Measure point 1	22.5	0.95	20.0	CenterSpot

Remarks:

OK

THERMOGRAPHY REPORT OF AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER PREPARED BY DR. B. E. KUSHARE AND ASSOCIATES, NASHIK

LOCATION: TPO+ PRINICIPAL ADMINISTRATION OFFICE PANEL INCOMER

File:

IR000591.BMT

Date:

04-01-2021

Time:

13:23:44



Picture parameters:

Emissivity: 0.95
Refl. temp. [°C]: 20.0

Picture markings:

Measurement Objects	Temp. [°C]	Emiss.	Refl. temp. [°C]	Remarks
Measure point 1	22.4	0.95	20.0	CenterSpot

Remarks:

OK

THERMOGRAPHY REPORT OF AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER PREPARED BY DR. B. E. KUSHARE AND ASSOCIATES, NASHIK

LOCATION: IT OLD & NEW BUSBAR CHAMBER

File:

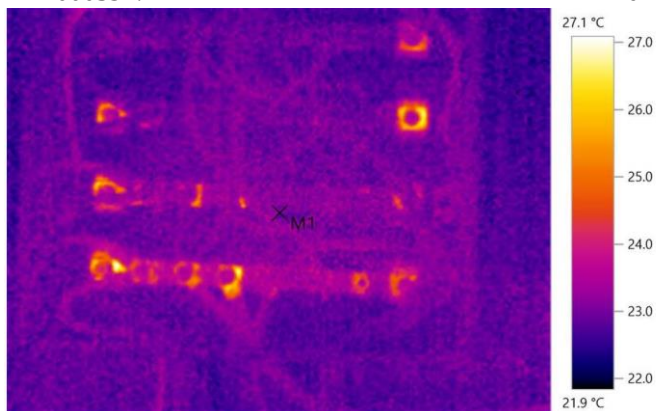
IR000592.BMT

Date:

04-01-2021

Time:

13:33:59



Picture parameters:

Emissivity: 0.95
Refl. temp. [°C]: 20.0

Picture markings:

Measurement Objects	Temp. [°C]	Emiss.	Refl. temp. [°C]	Remarks
Measure point 1	22.9	0.95	20.0	CenterSpot

Remarks:

OK

THERMOGRAPHY REPORT OF AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER PREPARED BY DR. B. E. KUSHARE AND ASSOCIATES, NASHIK

LOCATION: DIPLOMA MAIN POWER CONTROL PANEL INCOMER

File:

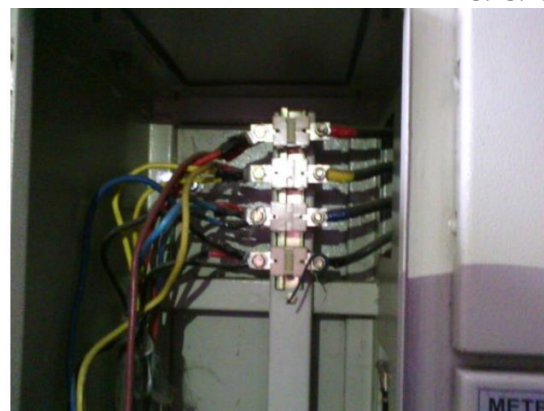
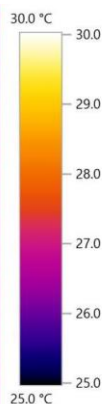
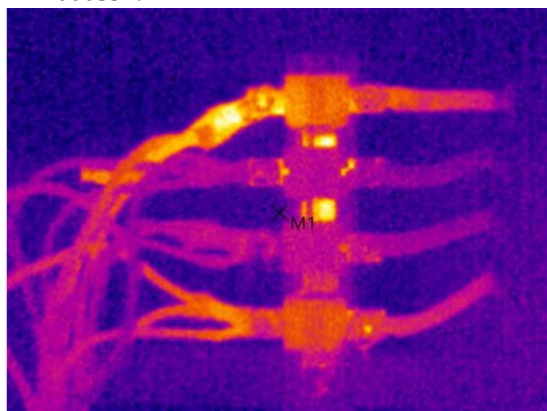
IR000594.BMT

Date:

04-01-2021

Time:

15:13:18



Picture parameters:

Emissivity: 0.95
Refl. temp. [°C]: 20.0

Picture markings:

Measurement Objects	Temp. [°C]	Emiss.	Refl. temp. [°C]	Remarks
Measure point 1	25.4	0.95	20.0	CenterSpot

Remarks:

OK